

Using Retaining Walls To Transform A Landscape

The logo for Turf, featuring the word "Turf" in a bold, black, sans-serif font. A green grass blade graphic is integrated into the letter 'T'.The logo for Tree Services, featuring the words "Tree Services" in a bold, black, sans-serif font. A small green leaf graphic is above the 'i' in "Services". Below the main text is the tagline "Taking Tree Care to New Heights" in a smaller, italicized font.The logo for DesignBuild, featuring the word "Design" in a black, sans-serif font and "Build" in a bold, orange, sans-serif font. A small orange square graphic is above the 'i' in "Design".The logo for PLOW, featuring the word "PLOW" in a bold, blue, sans-serif font. A registered trademark symbol (®) is to the upper right of the word.

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From the sky, a well-designed landscape can seem almost flat. Sure, you can see the patterns of the pavers, the shapes of the different-colored stones, and the touches of green and color from flowering plants. It's obvious if a backyard has seating areas and a pool, or a water feature. And of course lighting is visible at night. But overall, the scene is one dimensional.

Thank goodness the bird's eye view isn't the way most of us take in a landscaping project, for we would miss a lot.

The elevations, the rises and dips, the high and low points – those are all visible to the naked eye from lower levels. And that three-dimensional aspect that comes alive when walking around a property is exactly the effect landscape designers want when choosing to install walls – not just retaining walls for function, such as erosion control, but seating walls and boundaries to create living areas in a backyard oasis.



Techo-Bloc, used in the two larger walls above, play a large role in determining how installation is performed.

Jen Kloter, who is on the design team at [Bahler Brothers Inc.](#) based in Connecticut, achieved this goal with the project she designed for the Baltazar property in Wilbraham, Massachusetts. From high above, you can see the different levels of the property. But until you view the expanse at different angles, you don't see all that Kloter had to contend with.

Kloter says it was obvious from the start that they would need to include retaining walls in the backyard design, and many of the elevations evolved as they were building, as the site was still under construction when they got started. All in all, the walls built on the property totaled more than 2,300 square feet, with the tallest wall being 10 feet tall and about 210 feet

long.

“The pool design was a driver for what we ended up working with,” Kloter says. “The pool had revisions also – they moved it and it became bigger. The height of all the walls depended on where the pool was going to end up, so we worked backward from there.”

The project started with the two outer walls that include the playscape – the flat area that provides lawn space for the owners’ children to play. Then they worked around the house counter-clockwise, Kloter says, noting that there’s another retaining wall around the front, and grading and landscaping work was done out front as well.

“The next thing that drove where those walls needed to be was the vanishing edge of the pool and how to transition the patio areas,” she says.

Since the pool and patio were built on fill – the homeowner works in construction, Kloter says, so there was access to fill whenever it was needed – they had to discover where the native grade was and then install the two walls with engineered segmented retaining wall (SRW) with geo-grid behind them. Everything was built to an engineer’s specifications.



Toll Landscape went for a West Coast look with Unilock products for a model home at The Reserve in Holmdel, New Jersey. Natural stones were used around beds in the front.

Material choices matter

While most material choices were made based on aesthetics for the pool and patio area, the structural integrity of the bottom two retaining walls – because they wouldn’t be seen from the patio – was more important, Kloter says, noting they used [Techo-Bloc](#) for the lower two retaining walls. “That is our go-to block for when we’re doing a large wall, especially if it’s not going to be viewed or doesn’t need to be decorative,” Kloter said. “They’re super structural.”

Initially the design called for building the 10-foot wall below the pool, and then installing a fence, per local regulations that call for fencing around pools. However, they didn’t want to risk blocking the view. They discovered they could bury the 10-foot wall so only 4 feet was exposed, then install another 6-foot wall as a safety measure. “No one can climb that and fall into the pool,” she says.

For the other areas of the backyard, the homeowners were keen on using natural stone. Kloter says while she tried to talk them into a concrete product, they wanted the stonework to match what was already there on the house. So Kloter found a stonemason to work with her crew, but Bahler handled all the prep, backfill and quality control.

“In the Northeast, we have a lot of natural stone that we can get, a lot of different looks. A lot is native to our area or nearby, such as

Pennsylvania,” she says. “I also lived in Oregon and they have the opposite problem – you couldn’t get SRW blocks, so we had to build everything out of stone. It’s a much different look.

Kloter says it’s important to be aware of the differences between using engineered SRW or natural stone, because the shape and weight can affect installation tremendously.

“Say you’re building a 5-foot-high wall. If it’s out of SRW, it would be a single block wide or deep going up, usually with pins connecting them block to block and probably some geo-grid going some distance into the backfill behind the wall. All of that works together as a system.

“When working with stone, there’s no interlocking, so sometimes there’s slippage,” Kloter continues. “In order for a stone wall to be stable, you have to have really big pieces or the base of your wall needs to be 3 or 4 feet deep – you’re dealing with an incredibly large amount of stone. You can still use geo-grid, can still backfill, but the base of the stone wall is basically a big pyramid, going broad at the bottom.”

As for cost, Kloter estimates that natural stone accounts for 30 to 40 percent more than engineered SRW. On the Massachusetts project, because the Techo-Bloc they used was very basic, the natural stone probably ran more like 40 to 50 percent higher.

Ken Munroe, senior landscape supervisor for Toll Landscape in New Jersey, worked on the backyard of the model home for a new development called The Reserve in Holmdel, New Jersey, with designers Mark Culichia, president of [Toll Landscape](#), and Matt Moonan, vice president, as well as Tony Manganello, landscape supervisor. Munroe says they were tasked with bringing a more West Coast feel to the East Coast.

“Some of the walls are very linear and a different look than we’d typically use in New Jersey,” he says. “We wanted to appeal to a millennial buyer, a city kid, who is used to that kind of look.”

In order to achieve this, the design included a lot of straight lines and dark colors, using [Unilock](#) products for the flooring as well as the company’s Lineo dimensional wall for the walls, made of smooth block.

Munroe says the aesthetics dictated the materials used, so it would blend seamlessly with the overall look of the house. Though in the front yard, natural stone was used to match the stone veneer – called Pinnacle Stone – on the house itself.

The younger buyer looks for a sleeker product more so than an older buyer, Munroe says. Someone in his or her 20s and 30s usually wants a more contemporary look compared with other buyers.

Manganello says he thinks there’s a mix to what people go for when it comes to materials. “I think it comes down to personal preference of the homeowner,” he says. “When you show them different homes we’ve done, some like contemporary or the more natural, almost tumbled look that’s been

engineered to look old. I haven't seen anything to show we're going more engineered over natural stone. Even in older communities, senior communities, there's a mix."



Creating living areas

The homeowners of the Massachusetts home Kloter worked on both come from big families. "When family comes over, they needed every speck of space, however I needed to create intimate areas because they are a husband, wife and two children when it's just them."

Keeping the uses of the backyard in mind – for entertaining larger groups or when it's just the home's usual residents, is important when considering what to include in the landscape design.

"I tried to use the walls and curves of the walls to create little nooks and crannies and still leave some open spaces when more people will be over," Kloter says.

While she prefers to use concrete products for features such as fire pits, fireplaces, outdoor kitchens and sitting walls, when it comes to water features, Kloter says they will start incorporating natural stone and use boulders, river rocks and gravel – a mix of materials.

Munroe says it's important to talk to a homeowner about their outdoor lifestyle. "[Find out] what they want to use the outdoor spot for," he says. "It's no longer just a spot for a grill."

Munroe says the design at the Holmdel model home called for walls for a water feature and seating, and to form the base of a pavilion that houses entertaining items such as a pizza oven, refrigeration, a wine cooler and kegerator.

In addition to those elevated surfaces, planting beds were a key part of the aesthetic look they wanted to achieve.

"We're always looking for ways to break up hardscape with softscape," Munroe says. "You'll always find little pockets of flowers, [such as in the] pillars above the water or fire pits. It breaks it up and offers some color."

Installing raised planting beds along the house is another key design element Toll likes to employ, Manganello says. "We're always going to try to avoid pavers right up against the house, break up the siding and pavers with plantings," Munroe added.

Another feature that comes into play when building walls or planting beds is lighting. Munroe estimates that \$25,000 to \$30,000 of lighting was installed in the model home project to show off different architectural features of the house. Lighting was also included in the pavilion and inside the walls, under every cap and inside the pool. "All of the trees and plant material are highlighted with landscape lighting, too," he says.



Keeping drainage in mind

While the aesthetics of any type of wall are the fun part of design, the function must also come into play and drive how, where and what is installed.

“We always have to think about drainage,” Kloter says. “Water can be such a huge enemy – especially frozen water and what happens when it thaws. If it’s not installed properly, it will cause all kinds of problems.”

Kloter says Bahler Brothers tries to avoid any future warranty issues by building correctly from the get-go. For example, while standards from the [Interlocking Concrete Pavement Institute](#) say retaining walls need a pipe that exits on either end and every 40 feet, “we take that a step further and we install 3 feet of stone behind the walls, so there’s very little water even getting to the pipe then.”

She also explains that it’s recommended that a heavy compactor not get within 3 feet of the face of the wall, so anytime you have a wall, you’ll likely have soil there, but you can only compact it with a small compactor. Kloter says they try to bring in stone and run a small compactor over it, so it’s compacted well enough when they drop the retaining wall stones into place. Then, once they are past that 3-foot zone, they can run a big compactor over it.



Jen Kloter, who designed the Baltazar property in Massachusetts, used raised elements to create seating areas and other living spaces.

Future maintenance

One service that not all landscape design companies get involved with is the future of their installations years down the road. Bahler now has a division that does hardscape cleaning and maintenance. As a business that has been around for 30 years, Kloter says there are a lot of hardscapes in the ground with Bahler’s name on them. Customers are coming back and saying that the installations still look wonderful, they’re just a little grimy and need cleaning up.

“It’s a fairly new division for us,” she says, “but it’s gaining popularity. It’s been really good for us.”